REMARKS

Claims 2 and 3 remain for prosecution in the present application. These claims have been rejected over Chalon 4,830,656 combined with the publication *Ductile Iron Data for Design Engineers* (Ductile Iron). Reconsideration is respectfully requested.

The Examiner's citation of Chalon is apparently based upon Chalon teaching glassware molds having magnesium, sulfur and titanium contents within the ranges specified in the present application. However, Chalon teaches a ductile cast iron that is a ferrite-based casting. Ferrite is an essentially carbon-free solid solution in which alpha iron is the solvent, and which is characterized by a body centered cubic structure. *Iron Castings Handbook*, Walton & Opar, Iron Castings Society (1981). In contrast, the present invention provides an austenitic iron containing alloying elements such as nickel in sufficient quantity to render it substantially austenitic at ordinary temperatures. Austenitic iron is a face centered cubic structure. In other words, the ferrite-based iron disclosed in Chalon is completely different in structure from the ductile iron of the present invention.

In addition to possessing completely different structures, the properties of ferritic vermicular (compacted graphite) cast iron disclosed in Chalon, and type D-5 Ni-Resist ductile iron of the present invention, are also completely different. As pertaining particularly to glassware molds, the thermo physical properties are vastly different due to microstructure differences in the matrix surrounding the graphite. For example, the mean coefficient of thermal expansion (70-400 °F) is 7.0×10^{-6}/°F for ferritic vermicular cast iron, as compared with 4.0×10^{-6}/°F for Ni-Resist type D-5 ductile iron. The mean thermal conductivity (20-200 °C) is 36W/m-K for ferritic vermicular cast iron, as compared with a

mean thermal conductivity (20-450 °C) of 16W/m-K for type D-5 Ni-Resist ductile iron. The mean specific heat (20-450 °C) for ferrite vermicular cast iron is 510J/Kg-K, as compared with 871J/Kg-K for type D-5 Ni-Resist ductile iron.

The Examiner proposes to combine the ferritic vermicular cast iron teachings of Chalon with the Ni-Resist ductile iron teachings of the Ductile Iron publication. However, as noted above, the structures and properties of these two irons are completely different from each other. The Examiner provides no rationale for even being able to combine the teachings of these references, let alone why it would have been obvious to persons of ordinary skill in the art to do so.

In summary, the rejection of claims 2 and 3, based upon the combination of Chalon and Ductile Iron, is apparently premised solely on the ranges of magnesium, sulphur and titanium disclosed in Chalon combined with the percent nickel disclosed in Ductile Iron, and ignores the fact that these references teach and relate to completely different types of iron that are not in anyway combinable with each other. Reconsideration of claims 2 and 3 is respectfully requested.

Please charge any fees associated with this submission to Account No. 15-0875 (Owens-Illinois).

Respectfully submitted,

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